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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,903	09/12/2003	Haixiang He	120-161	8338
34845	7590	07/23/2007		
McGUINNESS & MANARAS LLP 125 NAGOG PARK ACTON, MA 01720			EXAMINER CHAI, LONGBIT	
			ART UNIT 2131	PAPER NUMBER
			MAIL DATE 07/23/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/661,903	HE ET AL.	
	Examiner	Art Unit	
	Longbit Chai	2131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,6-9,11 and 13-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,6-9,11 and 13-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/30/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to instant claims have been fully considered but are moot in view of the new ground(s) of rejection necessitated by Applicant's amendment.

Claim Objections

2. Claim 1 is objected to because of the following informalities: "the a destination field of the packet" should be "a destination field of the packet". Appropriate correction is required.
3. Claim 11 is objected to because of the following informalities: "by the client edge device to the backbone a provider edge device" should be "by the client edge device to the backbone; a provider edge device". Appropriate correction is required by adding a ";" between the claim limitations.

Double Patenting

The nonstatutory provisional double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground

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provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 9, 11, 13 and 15 are rejected under the judicially created doctrine of obviousness-type provisional double patenting as being unpatentable over claims 1 – 4, 12 – 15 and 23 – 26 of copending application 10/661,657. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1, 9, 11, 13 and 15 of the instant application are envisioned by the claims of the copending application that contain all the limitations of claims of the instant application such as encapsulating, transforming and updating a packet protocol between a first and second member of a private network over a backbone and the group identifier associated with the private network is obviously covered by the functions of appending, transforming and apportioning a packet protocol between a first and second member of a private network over a backbone and the group security association associated with the private network; and thereby, claims of the instant application are not patently distinct from the earlier copending application claim and as such are unpatentable for obvious-type provisional double patenting.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 13 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which

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applicant regards as the invention. Claims 13 and 15 are indefinite because "A provider edge node" and "A system" are recited in the claim preambles; however, the claim limitations such as "a key table", "a routing table", "a tunneling mechanism", "a transform logic" and "updating means" can be implemented in hardware, software or some combination, according to the specification (SPEC: Page 18 Line 5 – 11), and thereby the claim may be reasonably interpreted as being not limited to hardware elements and the claim may be merely directed to software per se with missing essential elements. Therefore, it is unclear and ambiguous with "a node" and "a system" being recited in the claim preambles. Besides, claims 13 and 15 are rejected under 35 U.S.C. 101 because the claimed invention is directed to software per se which is directed to non-statutory subject matter. Any other claims not addressed are rejected by virtue of their dependency.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A person shall be entitled to a patent unless –

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 6 – 9, 11 and 13 – 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Caronni et al. (U.S. Patent 6,970,941), in view of Hama et al. (U.S. Patent 7,072,346).

As per claim 1, 9 and 13, Liu teaches a method of securing packet data transferred between a first and second member of a private network coupled to client edge devices over a

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backbone comprising a plurality of provider devices including provider edge devices (Hama: see below), the backbone operating according to a routing protocol (Caronni : Column 2 Line 14 – 35 and Column 4 Line 38 – 52: "tunneling" refers to encapsulating one packet inside another when packets are transferred between two end points to ensure that the communication between itself and enterprise network is secure in that it cannot be viewed by an interloper), the method comprising the steps of:

encapsulating a private address of a packet from the first member in a public address of the packet to generate a tunneled packet (Caronni : Figure 2B & 6 / Element 640, Column 2 Line 30, Column 7 Line 10 – 20, Column 4 Line 40 – 60 and Column 6 Line 6 – 8: node ID is a private address and the real IP address is the public address);

transforming, at a client edge device (Hama, see below), the tunneled packet by first applying a group security association associated with the private network to the tunneled packet to provide a secure tunneled packet and then updating a field in the secure tunneled packet in accordance with the routing protocol of the backbone to provide a client transformed packet (Caronni : Column 6 Line 12 – 16, Column 7 Line 5 – 33, Column 3 Line 17 – 21 and Column 11 Line 37 – 43: VARPDB stores the mappings of the internal / private address, known as node ID, which is considered as a part of the group security association and the Supernet contains a modification to the IP packet format that can be used to separate network behavior from addressing or the destination address becomes the real public-network destination address w.r.t the routing protocol of the backbone).

However, Caronni does not disclose explicitly transforming at a client edge device.

Hama teaches transforming at a client edge device (Hama: Figure 1 / Element 111 / 114 & 102 / 103 and Figure 10(A) / 10(B), Column 10 Line 65 – Column 11 Line 7: the edge router at the VPN side where a packet enters from the transmit-side VLAN is considered as a client edge

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device and the edge router where a packet exits from the receive-side shared IP network is considered as a provider edge device)

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Hama within the system of Caronni because (a) Caronni teaches providing a virtual network mechanism that maintains secure communications between nodes, while providing the flexibility of assigning delivery methods independent of the delivery addresses to establishing a virtual network on top of current IP network delivery schemes allowing any type of delivery scheme assigned to any address or group of addresses (Caronni: Column 3 Line 15 – 26) and (b) Hama teaches providing a cost-effective and scalable VPN on a shared network by using an edge router provided on an edge of a shared network where the edge router on a transmitting / receiving side converts a packet, which is sent between the VLAN and the shared network (Hama: Column 6 Line 60 – 64 and Column 7 Line 15 – 31).

Caronni in view of Hama teaches:

forwarding the client transformed packet to a provider edge device (Hama: Figure 1 / Element 112 & 113: the edge device where a packet exits the shared IP public network is considered as the provider edge device); and

replacing, at the provider edge device, the a destination field of the packet with a group identifier associated with the private network for routing the packet across the backbone (Hama: Column 2 Line 4 – 18 / Line 53 – 67: a VLAN ID is considered as a group identifier associated with the private network which is assigned and tagged onto the packet).

As per claim 11 and 15, Caronni teaches a system for transforming packets for forwarding between a plurality of members coupled to client edge devices of a private network

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over a backbone comprised of a plurality of provider devices including provider edge devices (Hama: see below) in a scalable private network, wherein the backbone operates according to a protocol (Caronni : Column 2 Line 14 – 35 and Column 4 Line 38 – 52: "tunneling" refers to encapsulating one packet inside another when packets are transferred between two end points to ensure that the communication between itself and enterprise network is secure in that it cannot be viewed by an interloper), the apparatus comprising:

A client edge device (Hama: see below) including:

a tunneling mechanism for encapsulating packets that are to be transferred to the backbone in a public address including a gateway address and a destination address to provide a secured packet (Caronni : Figure 2B & 6 / Element 640, Column 2 Line 30, Column 7 Line 10 – 20, Column 4 Line 40 – 60 and Column 6 Line 6 – 8: node ID is a private address and the real IP address is the public address).

However, Caronni does not disclose explicitly a client edge device.

Hama teaches the client edge device ((Hama: Figure 1 / Element 111 / 114 & 102 / 103 and Figure 10(A) / 10(B), Column 10 Line 65 – Column 11 Line 7: the edge router at the VPN side where a packet enters from the transmit-side VLAN is considered as a client edge device and the edge router where a packet exits from the receive-side shared IP network is considered as a provider edge device).

See the same rationale of combination applied herein as above in rejecting the claim 1.

a key table, the key table including a security association for each private network that the node is a member (Caronni : Column 7 Line 5 – 33 : VARPDB stores the mappings of the internal / private address, known as node ID, which is considered as a part of key table) & (Hama: Figure 10A & 10B);

transform logic operable to apply a security association to each packet transmitted by the client edge device to the backbone (Caronni : Column 6 Line 12 – 16, Column 7 Line 5 – 33, Column 3 Line 17 – 21 and Column 11 Line 37 – 43: VARPDB stores the mappings of the internal / private address, known as node ID, which is considered as a part of the group security association and the Supernet contains a modification to the IP packet format that can be used to separate network behavior from addressing or the destination address becomes the real public-network destination address w.r.t the routing protocol of the backbone);

a provider edge device coupled to the client edge device, the provider edge device comprising a virtual route forwarding table for storing group identifiers associated with destination addresses (Hama: Figure 1 / Element 111 / 114 & 102 / 103 and Figure 10(A) / 10(B), Column 10 Line 65 – Column 11 Line 7: the edge router at the VPN side where a packet enters from the transmit-side VLAN is considered as a client edge device and the edge router where a packet exits from the receive-side shared IP network is considered as a provider edge device) and means responsive to the gateway address of the public address, for selectively updating the destination field of the packet with a group identifier for routing the packet across the backbone (Hama: Column 2 Line 4 – 18 / Line 53 – 67: a VLAN ID is considered as a group identifier associated with the private network which is assigned and tagged onto the packet) & (Caronni : Column 6 Line 12 – 16, Column 7 Line 5 – 33, Column 3 Line 17 – 21 and Column 11 Line 37 – 43: VARPDB stores the mappings of the internal / private address, known as node ID, which is considered as a part of the group security association and the Supernet contains a modification to the IP packet format that can be used to separate network behavior from addressing or the destination address becomes the real public-network destination address w.r.t the routing protocol of the backbone).

As per claim 6, Caronni as modified teaches the group security association is associated with each member of the private network (Caronni : Column 7 Line 5 – 33, Column 3 Line 17 – 21 and Column 11 Line 37 – 43: VARPDB stores the mappings of the internal / private address, known as node ID, which is considered as part of a group security association).

As per claim 7, Caronni as modified teaches member of the private network registering with a global security server; the global security server forwarding the group security association to each member of the private network (Caronni : Column 7 Line 64 – 67: KMS = Key Management Server : generating a new key and forwarding to each member of the private network).

As per claim 8, Caronni as modified teaches the global security server periodically forwarding a new group security association to each member of the private network (Caronni : Column 12 Line 3: updated every ten seconds).

As per claim 14, Caronni as modified teaches the group identifier is a group identifier of the private network (Hama: Column 2 Line 4 – 18 / Line 53 – 67: a VLAN ID is considered as a group identifier associated with the private network).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Longbit Chai whose telephone number is 571-272-3788. The examiner can normally be reached on Monday-Friday 9:00am-5:00pm.

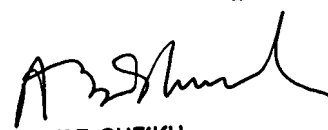
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz R. Sheikh can be reached on 571-272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Longbit Chai
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LBC


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